2 0 1 6

COMPUTER SCIENCE

(Major)

Paper : 5.4

(Microprocessor and Assembly Language Programming)

Full Marks : 60

Time : 3 hours

The figures in the margin indicate full marks for the questions

1. Answer the following questions as directed :

1×6=6

(a) Accumulator(A) is a tri-state 8-bit register.

(State True or False)

(b) Length of memory read machine cycle is 3-T states.

(State True or False)

(c) _____ instruction exchanges the contents of HL pair with DE register pair.

(Fill in the blank)

(Turn Over)

(d) _____ is a maskable, non-vectored interrupt having lowest priority.

(Fill in the blank)

(e) 8255 PPI is used for

(i) serial data transfer

(ii) parallel data transfer

(Choose the correct option)

(f) Which of the following instructions affects all flags of the status register?

(i) MVI

(ii) STA

(iii) ADD

(iv) SHLD

(Choose the correct option)

2. Answer the following questions : 2×5=10

(a) What is the function of stack pointer?

(b) Why is databus bidirectional?

(c) What is the difference between INR and INX instructions?

(d) What is T-state?

(e) What is the necessity to leave two status lines SI and SO in 8085?

(Continued)

3. Answer any *four* of the following questions :

5×4=20

(a) Discuss various types of addressing modes of 8085.

(b) List out different categories of the 8085 instructions. Give examples of instructions for each group.

(c) Give the register organization of 8085.

(d) Draw and explain timing diagram of opcode fetch cycle.

(e) List out the maskable and non-maskable interrupts available in 8085.

(f) Explain the RIM instruction.

(g) Explain the memory-mapped IO addressing scheme.

4. Answer any *three* of the following questions :

8×3=24

(a) Explain the pin diagram of 8085.

(b) Give the format of flag register in 8085. Explain each flag.

(c) Write an assembly language program to find out the largest number from a given unordered array of 8-bit numbers.

(Turn Over)

(d) Write an assembly language program to add two BCD numbers.

(e) Write a program to display your role no. on a seven-segment display unit. Assume the port address to be 00H.

(f) Draw the block diagram and explain basic function of 8255 A.

★ ★ ★